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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TANG, KENNETH

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,382

Applicant(s)

OGUS ET AL.

Examiner

Kenneth Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to the Amendment on 7/28/04. Applicant's arguments have been fully considered but are not found to be persuasive.
2. Claims 1-20 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are:

- a. In claim 1, there is no established relationship between the future event (line 1) and the third element, its third start time and third end time (lines 15-19) of the second data structure. It is not made explicitly clear in the claim language whether or not this refers to the future event. In other words, it is not made clear if the third start time and the third end time are the times for the future event.
- b. In claim 16, there is no established relationship between future events (line 1) and what is being stored in the second data structure (lines 8-15). It is unclear in the claim language whether or not the second data structure is related to the future events.

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4. Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

- a. In claim 16, "first element" and "second element" is indefinite because it is not made explicitly clear in the claim language whether or not they refer to the first event or a second event, respectively. It is not even clear whether or not there is only one event or a plurality of events because a second event is not introduced. It is also unclear which of the event(s) or elements are considered the future event.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chalmer et al. (hereinafter Chalmer) (US 6,687,903 B1) in view of Weber (US 5,781,769).

3. As to claim 1, Chalmer teaches a method of scheduling a future event comprising:
 - receiving a first event data including a first time at which a first event is to occur (*col. 1, lines 49-54*);

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- a first data structure associated with said first event, said first data structure (arrays or alternative data structures such as linked lists and/or tree structures) comprising a first element associated with a first start time and a first end time and a second element associated with a second start time and a second end time (event at periodic timer intervals) (*col. 1, lines 49-54 and col. 6, lines 31-44, Abstract*);
- associating said first event with said first element (context block) of said first data structure (array), said first time falling within said first start time and said first end time (periodic timer intervals and clock slice) (*col. 1, lines 49-54 and col. 6, lines 31-44, Fig. 4, items 66, 74*);
- receiving a second event data including a second time at which a second event is to occur, said second time not falling within said first start time and said second end time of said first data structure (clock slice checking) (*col. 1, lines 49-54 and col. 6, lines 31-44*);
- a second data structure for storing said second event data, said second data structure comprising a third element associated with a third start time and a third end time (*col. 1, lines 49-54 and col. 6, lines 31-44*); and
- associating said second event with said third element of said second data structure, said second time falling within said third start time and said third end time (clock slice checking) (*col. 1, lines 49-54 and col. 6, lines 31-44, Fig. 4, items 66, 74*).

4. Chalmer teaches using and maintaining data structures but fails to explicitly teach creating the data structures. However, Weber teaches scheduling events where data structures are created, searched and maintained (see Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of being able to

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create data structures so that the timed events could be controlled dynamically (*col. 7, lines 56-65*).

5. As to claim 2, Chalmer teaches the method of scheduling a future event of claim 1, wherein said first data structure comprises an array (*col. 6, lines 31-44*).

6. As to claim 3, Chalmer teaches the method of scheduling a future event wherein said second data structure comprises an array (*col. 6, lines 31-44*).

7. As to claim 4, Chalmer teaches associating said second event with a second one of said first data structure elements (*col. 6, lines 31-44*).

8. As to claim 5, Chalmer teaches wherein said act of associating said second event with a second one of said first data structure elements occurs after all time windows represented by said first data structure have expired (*col. 12, lines 63-67 through col. 13, lines 13*).

9. As to claim 6, Weber teaches wherein said second duration is greater than said first time duration (*col. 5, lines 44-53*).

10. As to claim 7, Weber teaches wherein each time window of said second duration comprises a period of time represented by the aggregate of all time windows in said first data structure (*col. 5, lines 44-53*).

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11. As to claim 8, Chalmer teaches wherein each of said first data structure elements comprises a list pointer, and wherein said associating act comprises: adding to a list associated with said one of said first data structure elements a list element indicative of said first event (*col. 1, lines 48-54 and col. 6, lines 31-44*).

12. As to claim 9, Chalmer teaches wherein said linked list pointer comprises an empty list (*col. 9, lines 34-37*).

13. As to claim 10, Chalmer teaches wherein said list comprises a doubly linked list (*col. 13, line 57*).

14. As to claim 11, Weber teaches initiating the events associated with a first one of said elements; and repeating said initiating act for successive ones of said elements at a pre-determined time interval (*see Abstract*).

15. As to claim 12, Chalmer teaches wherein said pre-determined time interval is said first duration (*col. 1, lines 49-65*).

16. As to claim 13, Chalmer teaches wherein said first data structure comprises an array in which said first data structure elements are arranged in an order, and wherein said method further comprising the acts of:

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- setting a pointer to point to a first one of said first data structure elements (*col. 6, lines 31-44*);
- repeatedly advancing said pointer to successive ones of said first data structure elements at a pre-determined time interval (*col. 6, lines 54-67*).

17. As to claim 14, Chalmer in view of Weber fails to explicitly teach wrapping the pointer to a beginning element in the order. However, it is well known in the art and obvious that pointers can be wrapped to go back to the beginning element of the list because it is a common and standard practice for wrapping pointers allocated to a list.

18. As to claim 15, Chalmer teaches a computer-readable medium having computer-executable instructions (*col. 1, lines 13-17*).

19. **Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (hereinafter Jones) (US 6,003,061) in view of Kaufman et al. (hereinafter Kaufman) (US 5,313,647).**

20. As to claim 16, Jones teaches a system for scheduling future events comprising:

- a first data structure comprising a plurality of elements, each of the plurality of elements of the first data structure associated with a period of time defined by a start time and an end time (time slices), the plurality of elements of the first data structure comprising a first element associated with a first start time and a first end time and a second element

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associated with a second start time and a second end time (*col. 1, lines 46-52, col. 3, lines 66-67 through col. 4, lines 1-2, Fig. 11, item 1120*); and

- a second data structure associated with the first element, the second data structure for storing a plurality of event data for events to be executed between the first start time and the first end time (*col. 1, lines 46-52, col. 3, lines 66-67 through col. 4, lines 1-2, Fig. 11, item 1120*); and

21. Jones teaches a scheduling module which receives a first event data including a first event time at which a first event is to occur (*col. 19, lines 47-61 and col. 23, lines 5-20*) but fails to explicitly teach storing the first event data in the second data structure with the first event time being within said first start time and said first end time (time interval). However, Kaufman teaches a digital data processing system that stores data when the process falls within the time interval (*col. 47, lines 18-22 and Abstract*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of storing the first event data in the second data structure with the first event time being within said first time interval to the existing system of Jones in order to increase the control by knowing when to store (by signal) into memory and to ensure that the time interval fits in the time-specific time constraint of Jones's system (*Jones: col. 3, lines 66-67 through col. 4, lines 1-2 and Kaufman: col. 47, lines 18-22 and Abstract*).

22. As to claim 17, Jones teaches wherein said first data structure comprises an array (*see claim 11*).

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23. As to claim 18, Jones teaches wherein each of said elements comprises a list pointer, and wherein said scheduling module adds said event data to a list pointed to by said one of said elements (*col. 13, lines 14-44*).

24. As to claim 19, Jones teaches wherein said list comprises a linked list (*col. 22, lines 34-45*).

25. As to claim 20, it is rejected for the same reasons as stated in the rejection of claim 16. In addition, Jones teaches an additional data structure that is separate from other data structures and that does not interfere with the time frame of the other data structure (*col. 19, lines 47-64*).

Response to Arguments

26. *Applicant argues that the amended claim 1 is now patentable because neither Chalmer nor Weber alone or in combination, disclose or suggest all the features of Applicant's amended claim 1.*

In response, the Examiner respectfully disagrees. The Applicant is referred to the rejection of claims 1 above that include the amended claim.

27. *Applicant argues that Weber fails to disclose or suggest at least creating a first data structure including a first element associated with a first start time and a first end time and a second element associated with a second start time and a second end time as recited by Applicants' amended claim 1.*

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt

10/7/04



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